



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0283; Project Identifier 2018-SW-045-AD; Amendment 39-21821; AD 2021-23-22]

RIN 2120-AA64

Airworthiness Directives; Leonardo S.p.a. Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Leonardo S.p.a. Model AB139 and AW139 helicopters. This AD was prompted by reports of failed main rotor (MR) dampers. This AD requires various inspections of certain MR dampers, as specified in a European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For EASA material incorporated by reference (IBR) in this AD, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; Internet www.easa.europa.eu. You may find the EASA material on the EASA website at <https://ad.easa.europa.eu>. For Leonardo Helicopters service information identified in this final rule, contact Leonardo S.p.A. Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G.Agusta 520, 21017 C.Costa di Samarate (Va) Italy; telephone +39-0331-225074; fax +39-0331-229046; or at <https://customerportal.leonardocompany.com/en-US/>. You may view this material at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room

6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. Service information that is incorporated by reference is also available in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0283.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0283; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the EASA AD, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Matt Fuller, AD Program Manager, General Aviation & Rotorcraft Unit, Airworthiness Products Section, Operational Safety Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email matthew.fuller@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2018-0112R1, dated June 4, 2018 (EASA AD 2018-0112R1), which is the most recent of a series of ADs issued by EASA, to correct an unsafe condition for certain Leonardo S.p.A. Helicopters (formerly Finmeccanica S.p.A., Helicopter Division (FHD), AgustaWestland S.p.A., Agusta S.p.A.), AgustaWestland Philadelphia Corporation (formerly Agusta Aerospace Corporation) Model AB139 and AW139 helicopters.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain serial-numbered Leonardo S.p.A. Model AB139 and AW139 helicopters with an MR damper part number (P/N) 3G6220V01351, 3G6220V01352, or 3G6220V01353 installed. The NPRM published in the *Federal Register* on March 31, 2020 (85 FR 17788). The NPRM was prompted by reports of

failed MR dampers. The NPRM proposed to require, for an affected helicopter with MR damper P/N 3G6220V01351, 3G6220V01352, or 3G6220V01353 installed, reducing the installation torque of each hub attachment bolt for each MR damper. For an affected helicopter with MR damper P/N 3G6220V01351 or 3G6220V01352 installed, the NPRM proposed to require: Repetitively inspecting the MR damper rod end (rod end) and MR damper body end (body end) for a crack; dye penetrant inspecting or eddy current inspecting certain rod and body ends for a crack; repetitively inspecting the rod and body end bearings for rotation in the damper seat and for misaligned slippage marks; repetitively inspecting the rod end broached ring nut; and repetitively inspecting the bearing friction torque value of the body and rod ends, and the MR damper anti-rotation block. Depending on the results of the various inspections, the NPRM proposed to require removing a part from service or replacing a part. For an affected helicopter with MR damper P/N 3G6220V01351 or 3G6220V01352 installed, the NPRM also proposed to require inspecting each rod end to determine if special washer P/N 3G6220A05052 is installed, and depending on the results, aligning the rod ends and broached rings, replacing any broached ring that cannot be aligned, inspecting the broached rings for wear and damage, and replacing the broached ring and installing a special washer. Lastly, the NPRM proposed to require installing MR damper P/N 3G220V01353, prohibit installing MR damper P/N 3G6220V01351 and P/N 3G6220V01352 on any helicopter, and allow the installation of MR damper P/N 3G220V01353 to constitute terminating action for all of the proposed repetitive required actions.

The FAA issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 by adding an AD that would apply to Leonardo S.p.a. Model AB139 and AW139 helicopters as identified in EASA AD 2018-0112R1. The SNPRM published in the *Federal Register* on September 14, 2021 (86 FR 51022). The FAA issued the SNPRM to add an action required by EASA AD 2018-0112R1 that was inadvertently omitted in the NPRM, correct thresholds for different actions proposed in the NPRM, and add the option to accomplish an eddy current inspection for some inspections. The SNPRM also utilized the FAA's new practice of proposing to incorporate EASA AD 2018-0112R1 by reference.

The FAA is issuing this AD to address a crack in an MR damper, which could result in seizure of the MR damper, detachment of the MR damper in-flight, and subsequent loss of control of the helicopter. See EASA AD 2018-0112R1 for additional background information.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the SNPRM or on the determination of the costs.

Conclusion

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA about the unsafe condition described in its AD. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these helicopters.

Related Service Information Under 1 CFR Part 51

EASA AD 2018-0112R1 requires reducing the installation torque of the bolts affixing each affected MR damper to the MR hub. For certain affected MR dampers, EASA AD 2018-0112R1 requires a one-time dye penetrant inspection of the rod and body ends, and a repetitive detailed visual inspection of the rod and body ends. EASA AD 2018-0112R1 allows an eddy current inspection as an alternative to those inspections. For certain affected MR dampers, EASA AD 2018-0112R1 also requires repetitively inspecting the rod and body end bearings for rotation, visually inspecting the rod end broached ring nut, accomplishing a bearing friction inspection of the body and rod end bearings, and a detailed inspection of the anti-rotation block. EASA AD 2018-0112R1 also requires a one-time visual inspection of certain affected MR damper rod end installations and a torque check of the MR damper broached ring nut. For certain affected MR dampers, EASA AD 2018-0112R1 requires replacing any special washer P/N 3G6220A05051 with a new washer P/N 3G6220A05052. If there is a crack or damage detected in any inspection, EASA AD 2018-0112R1 requires contacting Leonardo and, if

the discrepancy is confirmed, replacing the MR damper. EASA AD 2018-0112R1 also requires corrective actions if any discrepancy is detected in the inspections for rotation, friction, and torque. EASA AD 2018-0112R1 allows installing MR damper P/N 3G6220V01353 on a helicopter, provided that it is installed using the correct torque values. Lastly, EASA AD 2018-0112R1 prohibits installing MR damper P/N 3G6220V01351 and P/N 3G6220V01352 on any helicopter.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Differences Between this AD and the EASA AD

Where EASA AD 2018-0112R1 requires the compliance time of after the last flight (ALF) of the day inspection, this AD requires the compliance time of before the first flight of the day. Some compliance times in EASA AD 2018-0112R1 are on condition of part removal or replacement, whereas this AD does not include those compliance times. EASA AD 2018-0112R1 requires a torque check of the MR damper broached ring nut, whereas this AD requires a torque inspection instead to clarify that the action must be accomplished by a mechanic that meets the requirements of 14 CFR part 65 subpart D. EASA AD 2018-0112R1 requires making sure that there are no scratches or dents on the rod end, however it does not state corrective action for this requirement; this AD requires removing the rod end from service if there is a scratch or dent on the rod end. Where EASA AD 2018-0112R1 requires contacting Leonardo and replacing the MR damper with a serviceable part, this AD requires replacing or removing parts from service instead. Where EASA AD 2018-0112R1 requires accomplishing applicable corrective action(s) as specified in, and in accordance with, the instructions in service information, this AD requires removing parts from service for some of the corrective actions instead. Where EASA AD 2018-0112R1 requires a one-time dye penetrant inspection of certain rod ends when installed, this AD does not. Instead, this AD prohibits installing certain rod ends that are not marked with a black dot and therefore have not been inspected.

Costs of Compliance

The FAA estimates that this AD affects 126 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Performing the MR damper inspections takes about 24 work-hours, for an estimated cost of \$2,040 per helicopter and \$257,040 for the U.S. fleet, per inspection cycle.

Replacing a rod end takes about 3 work-hours and parts cost about \$500, for an estimated cost of \$755 per rod end. Replacing a broached ring and broached ring nut takes about 3 work-hours and parts cost about \$125, for an estimated cost of \$380 per broached ring and broached ring nut. Replacing an anti-rotation block takes about 3 work-hours and parts cost about \$50, for an estimated cost of \$305 per anti-rotation block. Replacing an MR damper takes about 2 work-hours and parts cost about \$18,000, for an estimated cost of \$18,170 per MR damper.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-23-22 Leonardo S.p.a.: Amendment 39-21821; Docket No. FAA-2020-0283; Project Identifier 2018-SW-045-AD.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Leonardo S.p.a. Model AB139 and AW139 helicopters, certificated in any category, as identified in European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD 2018-0112R1, dated June 4, 2018 (EASA AD 2018-0112R1).

(d) Subject

Joint Aircraft Service Component (JASC) Code: 6200, Main Rotor System.

(e) Unsafe Condition

This AD was prompted by reports of failed main rotor (MR) dampers. The FAA is issuing this AD to address a crack in an MR damper. The unsafe condition, if not addressed, could result in seizure of the MR damper, detachment of the MR damper in-flight, and subsequent loss of control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, EASA AD 2018-0112R1.

(h) Exceptions to EASA AD 2018-0112R1

(1) Where EASA AD 2018-0112R1 requires compliance in terms of flight hours (FH), this AD requires using hours time-in-service (TIS).

(2) Where EASA AD 2018-0112R1 refers to FH accumulated by a part since new (first installation on a helicopter) or since overhaul, this AD requires using total hours TIS.

(3) Where EASA AD 2018-0112R1 refers to its effective date; May 10, 2016 (the effective date of EASA AD 2016-0087, dated May 3, 2016); July 28, 2016 (the effective date of EASA AD 2016-0140, dated July 14, 2016); or September 11, 2017 (the effective date of EASA AD 2017-0160, dated August 28, 2017), this AD requires using the effective date of this AD.

(4) Where EASA AD 2018-0112R1 requires the compliance time of during an “after the last flight (ALF) of the day inspection,” this AD requires the compliance time of before the first flight of the day.

(5) Where the service information referenced in EASA AD 2018-0112R1 specifies using a magnifying glass, this AD requires using a 5X or higher power magnifying glass.

(6) Where the service information referenced in EASA AD 2018-0112R1 specifies discarding parts, this AD requires removing those parts from service.

(7) Where paragraph (2) of EASA AD 2018-0112R1 requires compliance within 30 FH after 10 May 2016 (the effective date of EASA AD 2016-0087, dated May 3, 2016), or at the first MR damper removal, whichever occurs first, for a MR damper that has accumulated 300 or more FH, this AD requires compliance within 30 hours TIS after the effective date of this AD for a MR damper that has accumulated 300 or more total hours TIS.

(8) This AD does not require the actions required by paragraph (3) of EASA AD 2018-0112R1.

(9) Where paragraph (8) of EASA AD 2018-0112R1 refers to having a serial number (S/N) specified in Part V of FHD BT 139-450, this AD requires the actions of that paragraph for helicopters with an MR damper part number (P/N) 3G6220V01351 or 3G6220V01352 with an S/N up to MCR8086 inclusive, installed, that has accumulated less than 600 total hours TIS.

(10) Where paragraph (10) of EASA AD 2018-0112R1 refers to having an S/N specified in in Part VII of FHD BT 139-450, this AD requires the actions of that paragraph for helicopters with:

(i) MR damper P/N 3G6220V01351 or 3G6220V01352 with an S/N up to MCR8764 inclusive, and with rod end P/N M006-01H004-041, -045, or -053, installed, except MR dampers confirmed of having 60-80 Nm applied and MR dampers marked with “BT 139-446 Part II” or “BT 139-446 Part III” on the logcard; or

(ii) MR damper P/N 3G6220V01351 or 3G6220V01352 that has had the damper rod end assembly removed before the issuance of “BT 139-446” installed, even if it has an S/N higher than MCR8764 or it has been confirmed of having 60-80 Nm applied.

Note 1 to paragraph (h)(10): MR dampers confirmed of having 60-80 Nm applied are listed in Table 1 (two pages) of Annex A, of Leonardo Helicopters Alert Service Bulletin No. 139-450, Revision D, dated May 28, 2019.

(11) Where paragraph (10) of EASA AD 2018-0112R1 requires a torque check, this AD requires a torque inspection.

(12) Where the service information referenced in paragraph (10) of EASA AD 2018-0112R1 specifies making sure that there are not scratches or dents on the rod end,

this AD requires, before further flight, removing the rod end from service if there is a scratch or dent on the rod end.

(13) Where paragraph (12) of EASA AD 2018-0112R1 requires contacting Leonardo and replacing the MR damper with a serviceable part, this AD does not. This AD requires the following:

(i) If there is a crack in an MR damper body end, before further flight, replace the MR damper.

(ii) If there is a crack in an MR damper rod end, before further flight, remove the MR damper rod end from service.

(iii) If there is damage in any teeth of a rod end broached ring nut or damper piston slot, or if the engagement or alignment is not correct, before further flight, remove the rod end broached ring nut from service.

(14) Paragraph (13) of EASA AD 2018-0112R1 requires accomplishing the applicable corrective action(s) “as specified in, and in accordance with, the instructions of FHD BT 139-450 or FHD BT 139-452, as applicable,” except where:

(i) If there is any bearing seat rotation or misaligned slippage mark in the MR damper rod end, this AD requires, before further flight, removing the MR damper rod end from service.

(ii) If the MR damper rod end torque value is more than 30.0 Nm (265.5 in lb), this AD requires, before further flight, removing the MR damper rod end from service.

(iii) If any MR damper anti-rotation block dimension measurement exceeds allowable limits, this AD requires, before further flight, removing the anti-rotation block from service.

(15) This AD does not mandate compliance with the “Remarks” section of EASA AD 2018-0112R1.

(i) Parts Prohibition

As of the effective date of this AD, do not install an MR damper rod end P/N M006-01H004-041, M006-01H004-045, or M006-01H004-053 on any helicopter, unless it is marked with a black dot indicating that it has passed inspections specified by Leonardo Helicopters BT 139-450.

(j) No Reporting Requirement

Although the service information referenced in EASA AD 2018-0112R1 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (l)(1) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Related Information

(1) For more information about this AD, contact Matt Fuller, AD Program Manager, General Aviation & Rotorcraft Unit, Airworthiness Products Section, Operational Safety Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email matthew.fuller@faa.gov.

(2) Leonardo Helicopters Alert Service Bulletin No. 139-450, Revision D, dated May 28, 2019, which is not incorporated by reference, contains additional information about the subject of this AD. For service information identified in this AD, contact Leonardo S.p.A. Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G. Agusta 520, 21017 C. Costa di Samarate (Va) Italy; telephone +39-0331-225074; fax +39-0331-

229046; or at <https://customerportal.leonardocompany.com/en-US/>. You may view this referenced service information at the contact information specified in paragraph (m)(4) of this AD.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD 2018-0112R1, dated June 4, 2018.

(ii) [Reserved]

(3) For EASA AD 2018-0112R1, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; Internet www.easa.europa.eu. You may find the EASA material on the EASA website at <https://ad.easa.europa.eu>.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. This material may be found in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0283.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to:

<https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on November 8, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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